

WE CLAIM

1. A method comprising:

encoding digital source material to steganographically convey plural-bit auxiliary data;
passing the encoded source material to a destination through at least one intervening

5 computer;

at said intervening computer, detecting encoded source material transmitted thereby; and
crediting a payment in response to said detection of the encoded source material, in
accordance with the plural-bit auxiliary data steganographically conveyed by the encoded source
material.

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2. The method of claim 1 which includes decoding plural-bit auxiliary data only
from source material that has first been tested to indicate the likely presence of such auxiliary
data therein.

3. The method of claim 2 which includes testing source material by reference to an
encoding attribute that is supplemental to said encoded plural-bit auxiliary data.

4. The method of claim 3 in which said attribute is the presence of a characteristic
signature signal conveyed by said source material.

5. The method of claim 4 in which the signature signal is a repetitive noise burst
signal.

6. The method of claim 1 in which said transmitting includes distributing through a
25 network of interconnected computers.

7. The method of claim 1
reporting said detection to a location remote from detection; and
crediting royalties based on detection.

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8. A method comprising:
presenting audio source material to a consumer, the material being encoded
steganographically to convey plural-bit auxiliary data;
decoding the audio source material that is presented to the consumer to decode the
auxiliary data therefrom; and
using the plural-bit auxiliary data to retrieve information about the source material from a
remote location.

9. The method of claim 8 that includes:
storing data indicating the audio source material(s) presented to the consumer;
generating a report based on the stored data, indicating the audio source material(s)
presented to the consumer.

10. The method of claim 8 which includes detecting the presented audio source
material with a microphone, and decoding the auxiliary data from a microphone output signal.

11. A method comprising:
receiving an object steganographically encoded with plural-bit auxiliary data; decoding
the plural-bit auxiliary data from the object;
consulting a registry to determine a proprietor of the object, by reference to said decoded
plural-bit auxiliary data; and
making a payment to said proprietor.

12. The method of claim 11 that includes making said payment through the registry.

13. The method of claim 11 in which the object is a work of authorship, and the
encoding adds a generally imperceptible level of noise to the object as it is perceived by a
consumer thereof.

14. The method of claim 11 in which the registry comprises a database accessible
through the internet.

15. A method of encoding a digital object, comprising:
encoding the object with a first information signal, said first information signal having relatively small information content, but permitting rapid decoding; and
5 encoding the object with a second information signal, said second information signal conveying more information content than the first information signal, requiring relatively more time to decode; wherein the first and second information signals comprise at least one watermark embedded in the digital object.

10 16. The method of claim 15 in which the first information signal is a signal indicating to decoding equipment that the object is not to be copied, and the second information signal is a signal conveying information relating to ownership of the object.

15 17. The method of claim 15 in which:
the digital object is a digital representation of music; and
the first information signal is a repetitive signal that is conveyed at a low level within said music.

20 18. The method of claim 15 in which the first and second signals are independent of each other.

19. The method of claim 15 in which the first and second signals are aspects of a combined watermark signal.

25 20. A method of processing an object that has been steganographically encoded with first and second information signals, the method comprising:
decoding from the object the first information signal;
controlling an operation of an apparatus in accordance with the decoded first information signal; and

30 decoding from the object the second information signal, wherein the second information signal conveys a master global address.

21. A method of encoding audio with a marker signal indicating a master global address used to link to a web site, wherein the marker signal is characterized by being in-band and repetitive.

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22. A method comprising:
reading payload data from a watermark on a physical object using a device; and
using the payload data read by the device in connection with a commercial transaction involving music related to said object.

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23. The method of claim 22 in which the object is a poster having artwork thereon.

24. The method of claim 22 in which the object is a storage medium having a music video recorded thereon.

25. The method of claim 22 in which the device is a handheld, battery powered device.

26. A method of altering music data to steganographically insert plural bits of watermark data therein, characterized by inserting a first group of said bits for benefit of an end-user of the music data, inserting a second group of bits different than the first for benefit of an artist whose music is encoded by said music data, and inserting a third group of bits different than the first two for benefit of a distributor of the music data.

27. The method of claim 26 in which the first group of bits represents an internet address of a web site that may be accessed by end-users of the music data.

28. The method of claim 26 in which the second group of bits includes bits representing a unique identifier for the music data, permitting machine identification of the data and royalty credit to the artist.

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29. The method of claim 26 in which the third group of bits represents usage restrictions to which audio appliances are responsive, thereby driving distribution of additional copies of the music data.

5 30. A media object clearinghouse system comprising:
a media object clearinghouse operable to transfer a media object electronically;
a watermark decoder in communication with a media object receiver to receive a media
object signal and operable to decode a watermark from the media object signal identifying the
media object; and
10 a transmitter in communication with the decoder for receiving a media object identifier
derived from the watermark and for transmitting the media object identifier and a user identifier
to the clearinghouse;
wherein the media object clearinghouse is operable to identify the media object based on
the media object identifier and the user based on the user identifier and electronically transfer a
copy of the media object to a predetermined location associated with the user.

15 31. The media object clearinghouse of claim 30 wherein the predetermined location is a
computer of the user.

20 32. The system of claim 30 wherein the clearinghouse is operable to determine a fee
based at least in part on the media object identifier and to credit an account of the user with the
fee for the copy of the media object.

25 33. The system of claim 30 wherein the predetermined location is a website, and the
copy is accessible to the user at the website via a user-set password.

34. The system of claim 30 wherein the predetermined location is a personal library of
the user that is consolidated with libraries of other users in a central location.

30 35. The system of claim 30 wherein the predetermined location is a personal library of
the user.

36. The system of claim 35 wherein the clearinghouse and the personal library are connected via an internet connection and the personal library receives the copy from the clearinghouse over the internet connection.

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37. The system of claim 35 wherein the personal library is operable to receive the copy of the media object from the clearinghouse via a wireless broadcast.

38. The system of claim 35 wherein the personal library provides the copy to a playback device by a wireless broadcast.

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39. The system of claim 30 wherein the watermark includes a key to information about the media object, and the key is used to look up information about the media object.

40. The system of claim 39 wherein the information about the media object is presented to a user through the media object receiver.

41. The system of claim 40 wherein the information is stored in a device including the media object receiver, and the information is updated from a remote source.

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42. The system of claim 30 wherein the media object receiver includes a user interface that enables a user to select a media object for watermark decoding and that presents information to the user about the media object derived from the watermark.

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43. The system of claim 30 wherein the media object receiver includes a user interface that enables a user to select a media object for watermark decoding and that enables the user to instruct the clearinghouse to send a copy of the selected media object to another user.

44. The system of claim 30 wherein the media object receiver includes a user interface that enables a user to select a media object for watermark decoding and that enables the user to query a database for related information about the selected media object using data derived from the watermark.

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45. The system of claim 44 wherein the user interface is operable to present the related information to the user.

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46. The system of claim 30 wherein the media object is a song and the receiver is a radio operable to receive the song via a radio broadcast.

47. The system of claim 30 wherein the media object is a song and the receiver is an audio player that receives the media object via a computer network.

48. A media object clearinghouse method comprising:
receiving a media object from a broadcast or electronic transfer;
decoding a watermark from the media object;
deriving a media object identifier from the watermark;
transmitting the media object identifier and a user identifier to a clearinghouse;
in the clearinghouse, identifying the media object based on the media object identifier and the user based on the user identifier and electronically transferring a copy of the media object to a predetermined location associated with the user.

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49. The method of claim 48 including:
in the clearinghouse, charging a user account associated with the user identifier with a fee for the copy.

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50. A method for linking an audio object with additional information or actions related to the audio object comprising:

decoding a watermark from the media object;
deriving a master global address from the watermark;
5 connecting to a remote device and retrieving additional information associated with the audio object based on the master global address.

51. The method of claim 50 including:
retrieving information about the audio object from a web server linked to the audio object
10 through the master global address.

52. The method of claim 50 including retrieving menu options about the audio object from a remote device based on the master global address.

53. The method of claim 52 wherein the menu options are responsive to user input to control use, rendering or playback of the audio object.

54. The method of claim 52 wherein the menu options are responsive to user input to initiate electronic payment for the audio object.

55. The method of claim 52 wherein the menu options are combined with standard menu options for a file type associated with the audio object.

56. The method of claim 50 including retrieving instructions governing use of the audio
25 object.

57. The method of claim 50 including initiating an electronic commercial transaction relating to the audio object.

using the master global address to query a server, which in turn looks up an address of a device to which the query is to be routed.

5 59. The method of claim 58 wherein the second device returns information related to the audio object.

60. The method of claim 59 wherein the information returned by the second device includes a web page.

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1. The first part of the report is a general introduction to the project, which includes a brief history of the organization and a statement of its mission.